

Title (en)
HYDRAULIC TENSION SPRING

Title (de)
HYDRAULISCHE ZUGFEDER

Title (fr)
RESSORT DE TENSION HYDRAULIQUE

Publication
EP 3161341 A4 20180404 (EN)

Application
EP 15811555 A 20150616

Priority
• US 201414317447 A 20140627
• CA 2015000390 W 20150616

Abstract (en)
[origin: US2015377313A1] A hydraulic tension spring comprises a block comprising at least one liquid-impermeable cylinder and at least one piston disposed through an open end of the cylinder. The piston provides a piston guide within a liquid containment space within the cylinder filled with hydraulic fluid. A tensioning member moves the piston or the cylinder relative to the other to compress the hydraulic fluid and load the spring, while the piston guide keeps the piston axially aligned to prevent buckling.

IPC 8 full level
A61F 5/37 (2006.01); **F16F 5/00** (2006.01); **F16F 9/16** (2006.01); **F16F 9/28** (2006.01); **A61F 5/01** (2006.01)

CPC (source: EP US)
A61F 5/01 (2013.01 - US); **A61F 5/0106** (2013.01 - EP US); **F16F 5/00** (2013.01 - US); **F16F 9/16** (2013.01 - EP US); **F16F 9/28** (2013.01 - EP US); **A61F 2005/0169** (2013.01 - EP US); **A61F 2005/0179** (2013.01 - EP US)

Citation (search report)
• [XY] US 2013245524 A1 20130919 - SCHOFIELD JONATHON S [CA]
• [XY] US 4630805 A 19861223 - TAYLOR PAUL H [US]
• [XYI] GB 733006 A 19550706 - DOWTY EQUIPMENT LTD, et al
• See references of WO 2015196270A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 2015377313 A1 20151231; **US 9416838 B2 20160816**; AU 2015281803 A1 20170216; AU 2015281803 B2 20181108;
AU 2019200555 A1 20190214; AU 2019200555 B2 20191024; CA 2953010 A1 20151230; CA 2953010 C 20220719; EP 3161341 A1 20170503;
EP 3161341 A4 20180404; EP 3161341 B1 20220112; JP 2017522519 A 20170810; JP 6651512 B2 20200219; WO 2015196270 A1 20151230

DOCDB simple family (application)
US 201414317447 A 20140627; AU 2015281803 A 20150616; AU 2019200555 A 20190129; CA 2015000390 W 20150616;
CA 2953010 A 20150616; EP 15811555 A 20150616; JP 2017519733 A 20150616